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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	: GERDER et al.
Serial No	: 10/737,202
Confirm. No	: 5742
Filed	: December 16, 2003
For	: BREATHING GAS TUBE...
Art Unit	: 3764
Examiner	: Amadeus S. Lopez
Dated	: July 2, 2008

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REPLY BRIEF

In response to the Examiner's Answer dated May 30, 2008, applicant provides the following remarks.

Section 7

The Examiner is correct in that the copy of the appeal claims in the appeal brief omitted the amendments made to claims 9, 10 and 21. With this Reply Brief applicant is submitting a corrected claims appendix. Applicant thanks the Examiner for the careful reading of the claims.

Section 10

With regard to the obviousness rejection, the framework for determining obviousness is stated in Graham v. John Deere Co. and the factual inquiries are as follows:

(1) determining the scope and content of the prior art;

(2) ascertaining the differences between the claimed invention and the prior art;

(3) resolving the level of ordinary skill in the pertinent art.

The last item "resolving the level of ordinary skill in the pertinent art", appears to be answered differently by the Examiner and the applicant. The Examiner takes the position that an ordinary artisan in the respirator arts would be versed in electrical and mechanical engineering. However the Examiner does not indicate how "versed" in electrical and mechanical engineering this ordinary artisan in the respirator arts would be. The rejection does not provide any support for why the level of ordinary skill in the respirator arts would be high enough to have knowledge of the technology behind inductive and infrared contactless interfaces, and be high enough to substitute such contactless interfaces for the contact connections of the prior art.

As previously described, inductive and infrared contactless interfaces require understanding the generation of electromagnetic waves from electric currents and voltages in electrically conductive material, the propagation of electromagnetic waves through various different materials, including electrically conductive and non-conductive material, and then the reception of the electromagnetic waves and their subsequent conversion back into electric currents and voltages. Such knowledge is heavily based on what is known as Maxwell's equations. For those not familiar with Maxwell's equations, they are mathematically

complicated and are shown below:

$$\oint_S \mathbf{D} \cdot \mathrm{d}\mathbf{A} = Q_{f,S}$$

$$\oint_S \mathbf{B} \cdot \mathrm{d}\mathbf{A} = 0$$

$$\oint_{\partial S} \mathbf{E} \cdot \mathrm{d}\mathbf{l} = -\frac{\partial \Phi_{B,S}}{\partial t}$$

$$\oint_{\partial S} \mathbf{H} \cdot \mathrm{d}\mathbf{l} = I_{f,S} + \frac{\partial \Phi_{D,S}}{\partial t}$$

As one can see, inductive and infrared contactless interfaces require a highly specialized knowledge. An ordinary artisan in the respirator arts would not have the level of skill in the electrical engineering field to understand the above science behind inductive and infrared contactless interfaces. While the ordinary artisan in the respirator arts would have some electrical knowledge, this person would not be required during the ordinary practice of assisted respiration to be familiar with the technology behind inductive and infrared contactless interfaces.

Applicant notes that applicant's own statements are used to disclose that inductive and infrared contactless interfaces are known. Applicant made these statements because the present

application was initially rejected for not fully disclosing these contactless interfaces. It appears that the Examiner was not familiar with what is embodied by inductive and infrared contactless interfaces, and how such interfaces work. After applicant provided information and support that such interfaces were known, this rejection was removed.

While an Examiner in the respirator arts may not have the same level of skill as an ordinary artisan in the respirator arts, such an Examiner certainly has some skill in the respirator arts. If this Examiner was not familiar with inductive and infrared contactless interfaces before the present application, this is certainly indicative that the ordinary artisan in respirator arts may also not be familiar with inductive and infrared contactless interfaces.

Resolving the level of ordinary skill in the pertinent art appears to be a significant requirement in the present obviousness rejection. Applicant has provided much information regarding the technology behind inductive and infrared contactless interfaces. Applicant has also shown how this technology is very specialized and would not be necessary for an ordinary artisan to practice in the present respirator arts. Applicant has even shown how someone with some knowledge of the respirator arts, such as the present Examiner, was not familiar with the technology behind inductive and infrared contactless interfaces, until introduced by the present application.

The rejection on the other hand, has not established how or why technology behind inductive or infrared contactless interfaces, would be within the level of ordinary skill in the respirator arts. The rejection states that such an artisan would be versed in electrical engineering, but not why such an artisan would be versed to the level of inductive and infrared

contactless interfaces. Therefore is applicant's position that the rejection fails to fully resolve the level of ordinary skill, and certainly fails to support its position that inductive and infrared contactless interfaces are within the level of ordinary skill.

For all of the above reasons, the board is respectfully requested to overrule the Examiner's rejection with regard to the rejection under 35 USC section 103.

The Examiner's Answer also discusses the claim language of "additionally designed as a tube heater". The Examiner states that the wires associated with the signal line of Bahr are capable of producing at least a minimal amount of heat if so desired. However Bahr does not show any structure, or provide any incentive to desire at least a minimal amount of heat. The mere fact that a structure is capable of performing a function, does not specifically disclose that structure is present for actually performing the function. Therefore the mere ability of the signal lines in Bahr is not sufficient to anticipate the feature of being "additionally designed as a tube heater".

The Examiner's Answer also states that the inherent heating of the two wires of Bahr meets the claimed limitation of "tube heater". This interpretation appears to deliberately avoid the full limitation "additionally designed as a tube heater". Applicant notes that all the features of the claim must be considered and since this rejection specifically avoids the full limitation, the rejection is untenable.

For all of the above reasons, the board is respectfully requested to overrule the Examiner's rejection with regard to the rejection under 35 USC section 103.

Favorable action on the merits of this application is respectfully requested.

Respectfully submitted
for Applicant,

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71163-14
Enclosed: Claims Appendix

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SHOULD ANY OTHER FEE BE REQUIRED, THE PATENT AND TRADEMARK OFFICE IS HEREBY REQUESTED TO CHARGE SUCH FEE TO OUR DEPOSIT ACCOUNT 13-0410.

CLAIMS APPENDIX

1. A respirator breathing gas tube for supplying a user with breathing gas, the breathing tube, comprising:

a sensor means at an end of the breathing gas tube facing away from the respirator;

a signal line extending along the breathing gas tube and designed to transmit signals of the sensor means to the respirator;

a contactless interface between the signal line and the sensor means.

2. A breathing gas tube in accordance with claim 1, wherein the signal line comprises a fiberoptic waveguide.

3. A breathing gas tube in accordance with claim 1, wherein the signal line is a two-wire line.

4. A breathing gas tube in accordance with claim 1, wherein the signal transmission between the respirator and the sensor means takes place bidirectionally via a data transfer.

5. A breathing gas tube in accordance with claim 3, wherein the two-wire line is additionally designed as a tube heater.

6. A breathing gas tube in accordance with claim 3, wherein the contactless interface includes a first inductive interface.

7. A breathing gas tube in accordance with claim 6, wherein the first inductive interface is designed to transmit a supply voltage to the sensor means in addition to the signals.

8. A breathing gas tube in accordance with claim 1, wherein the contactless interface is an infrared interface.

9. A breathing gas tube in accordance with claim 1, wherein:

the breathing tube has a first end adjacent the sensor means and a second end, a respirator is arranged adjacent said second end, said signal line extends along said breathing tube from said first end to said second end, the sensor means is designed as an individual sensor means or as a combination for a measurement of temperature, humidity, flow, gas concentration or pressure.

10. A breathing gas tube in accordance with claim 1, wherein another contactless interface is provided between the breathing gas tube and the respirator.

11. A process for using respiration system with a respirator, the process comprising the

steps of:

providing a sensor means for sensing breathing gas characteristics;

providing a breathing gas tube;

providing a contactless interface between the breathing gas tube and the sensor for transmitting sensor signals.

12. A process according to claim 11, further comprising:

disposing the sensor means at an end of the breathing gas tube facing away from the respirator;

providing a signal line extending along the breathing gas tube and transmitting signals of the sensor means to the respirator with the contactless interface being provided between the signal line and the sensor means.

13. A process according to claim 12, wherein the signal line comprises one of a fiberoptic waveguide and a two-wire line.

14. A process in accordance with claim 11, wherein the signal transmission between the respirator and the sensor means takes place bidirectionally via a data transfer.

15. A process in accordance with claim 13, wherein the two-wire line additionally heats the breathing gas tube.

16. A process in accordance with claim 13, wherein the contactless interface includes one of an inductive interface and an infrared interface.

17. A process in accordance with claim 11, wherein the sensor means measures one or more of temperature, humidity, gas flow, gas concentration or gas pressure.

18. A respiration system, comprising:

a respirator/ventilator;

a breathing gas tube for supplying a user with breathing gas, the breathing tube being connected to said respirator/ventilator at a proximal end and said breathing gas tube having a distal end;

a sensor at a distal end of said breathing gas tube;

a signal line extending along said breathing gas tube for transmitting signals of the sensor to said respirator/ventilator;

a contactless interface between said signal line and said sensor.

19. A respiration system in accordance with claim 18, wherein the signal line comprises one of a fiberoptic waveguide and a two-wire line establishing bidirectionally signal transmissions between said respirator/ventilator and said sensor.

20. A respiration system in accordance with claim 19, wherein the two-wire line is additionally designed as a tube heater.

21. A respiration system in accordance with claim 18, wherein another contactless interface is arranged between said breathing gas tube and said respirator/ventilator, the contactless interfaces includes one of an inductive interface and an infrared interface.